



@ptitude Exchange

SKF®

Statistics

- Over 108,558 registered users
- Over 1,022 visitors per day
- Over 788 articles, tutorials and interactive services.

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@ptitude Exchange Newsletter - Vol. 8, Ed. 10 Equip the world with SKF knowledge

Dear Daniela,

Welcome to the SKF @ptitude®Exchange Newsletter for October 2009. [SKF @ptitude Exchange](#) news is intended to inform you about new trends, articles, services, and behind the scenes information on SKF @ptitude Exchange. If you have any questions, or comments on what you would like to see in upcoming SKF @ptitude Exchange newsletters, [please let us know](#).

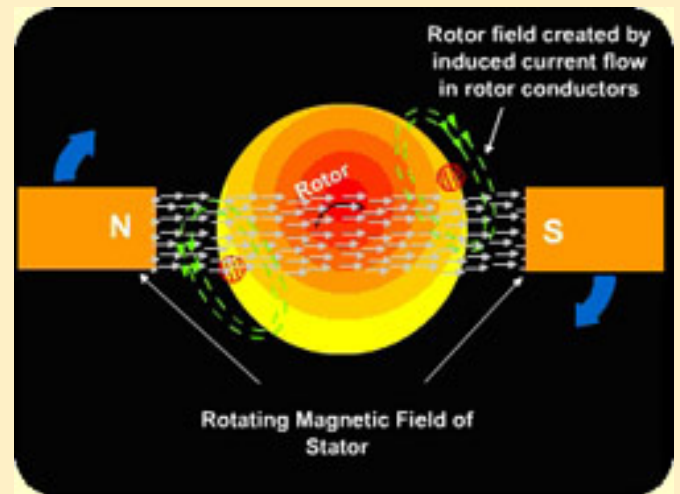
Have you only recently registered with SKF @ptitude Exchange? Did you know that you can download previous newsletters? Go [here](#)

New article from Baker Instruments:

Diagnosing Rotor Bar Issues with Torque and Current Signature Analysis

by Drew Norman

This article presents a conceptual explanation of rotor construction and operation and explains the effect of a broken rotor bar on this operation. A review of several techniques for rotor condition analysis is offered, along with an explanation of the calculations and where to find the faults frequencies in the spectrum. [Learn more](#)



Guide to using the SKF general Catalogue

Introduction to Principles of bearing selection and application: Selection of bearing type

by Joe Conyers

This fourth in our series of articles on how to use the SKF General Catalogue continues the discussion on principles of bearing selection and application, focusing on the [selection of bearing type](#).

***NEW* articles**

This month we reproduce three articles from Evolution magazine, issue 3 2009.

[Sustainable production using minimal quantity lubrication](#)

by Ralf Domrös, Dr Götz Spieß, and Götz Mehr



Minimal quantity lubrication (MQL) has come of age as part of a drive to improve productivity for cutting processes such as drilling, milling and lathe work. SKF has a competence centre dedicated to developing solutions using MQL to help its customers reap the benefits of applying this technique in their manufacturing. Compared with conventional full-flood cooling lubrication, acquiring an MQL system requires significantly less investment than that of a cooling lubricant system. [Learn more](#)

[SKF Knowledge Engineering results in customer benefits](#)

by Uwe Engelbrecht

Knowledge engineering means bringing together all the technology and expertise needed to fulfill customers' requirements when it comes to bearing-related services. SKF has invested heavily in providing complete solutions through its deep understanding of the underlying technology, materials and processes needed to make it the preferred partner when it comes to bearing-related systems and services. [Learn more](#)



[Sensorized traction motor bearing units](#)

by Gottfried Kure and Dr Ladislav Sobotka



Modern transport solutions, particularly urban tram systems, demand that a key component, the traction motor, exhibits good reliability combined with a low need for maintenance. SKF has developed specific integrated bearing unit solutions that meet these stringent operating conditions for traction motor bearings. The latest development phase for traction motors is the traction motor bearing unit (TMBU) design with integrated sensors to detect speed and absolute positioning. The position signal is used for the AC drive control system and the speed signal to control the brake system. The sensor housing is directly flanged on the stationary part of the labyrinth sealing system, and the impulse wheel function is integrated into the rotating part of the sealing system. This design follows the technical trend towards the increased use of ready-to-mount units or subsystems that incorporate additional technical features with sealed and greased-for-life bearing units. [Learn more](#)

Consequences of poor shaft fit

This month's tip reveals the complexity behind the "simple" tips in the Electric Motor Handbook:

"Inspect the shaft and housing. Check for size and damage; remove nicks and burrs with emery paper, and wipe clean with a soft cloth. Replace or repair shafts and housings showing obvious signs of wear or damage. A shaft placed in a vise for mounting should be protected from vise jaws with a sheet of soft metal."



The request to "Check for size and damage" is pretty simple, but how do you know what the correct shaft size should be? You can find guidance by looking deeper into the Handbook. The Handbook's table of contents will point you to "Shaft and Housing Diameters." The tables on these pages list "everyday" shaft and housing sizes for electric motors with the two most common motor bearing types: Single Row Deep Groove Ball bearings and Cylindrical Roller bearings. For Spherical Roller Bearings, Metric Taper Roller Bearings, or other bearing types, you can get the proper shaft and housing fits from the SKF General Catalog 6000, or online, from the [SKF Interactive Engineering Catalog](#). Be aware that if you have a special application, such as a vibratory motor for use in shaker screens, the "everyday" fits do not apply. Contact your local SKF Applications Engineering Service for help.

Conformance measurements can be recorded using a [free form](#) you can find online at www.skf.com/mount (free service, registration required.)

Important note: Shape is even more important than size. For example, if the shaft fit for a 6212 bearing is supposed to be to m5, the shaft tolerance is 60.024 - 60.011mm (2.3631 - 2.3626 inches.) However, the deviation allowed is just half of the overall permissible diameter tolerance. In this case, the maximum **deviation** would be 6.5 microns (0.00026 inches.)

If you dig deeper, you'll see that **form tolerances** are a complex subject that takes time to master. Selection and execution of the proper shaft and housing fit is just one part of making sure a bearing runs properly. Shoulder runout, shaft straightness, seat squareness and so on are equally important. Many shops don't have the training, skills or equipment needed to produce a quality shaft or housing, or to repair to

proper specification. Use every bit of SKF Knowledge Engineering to make sure you get it right, and you'll have a long-lasting, reliable machine.

Calling All Experts

Are we missing something? Are you the expert that can help us? Thanks to all of you who answered our call for new contributions. Without your continued help and support SKF @ptitude Exchange would not be the portal it is today – but we still need more high quality papers to publish. Please continue to send all articles for submission to [Mel Barratt](#). In doing so, we will be able to respond more quickly and process your submission in a much more efficient way.

Feedback?

As always, SKF @ptitude Exchange depends upon your feedback on how to make our site even better. We look forward to hearing from you. feedback@aptitudexchange.com

The @ptitude Exchange Team